Emulex Driver for VMware ESX

Driver Versions 7.4.0.X

User Manual

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Critical Connectivity Solutions™

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Emulex, 3333 Susan Street

Costa Mesa, CA 92626

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Installation

Driver Information

Supported Features

- Supports 256 (0-255) logical unit numbers (LUNs)
- Supports dynamically adding LUNs and targets
- Topology support: FC-AL, point-to-point, fabric with auto-topology negotiation
- Support for 1, 2, 4 and 8 Gb/s capable HBAs with auto-rate negotiation
- Protocols: SCSI-FCP and FC initiator mode
- Support for up to sixteen host bus adapter (HBA) ports
- Remote monitoring and parameter configuration using Emulex's HBAnyware® version 3.4 Java-based graphical user interface (GUI) client utility and the hbacmd scriptable command-line interface
- Parameter configuration using Emulex's LightPulse® lputil command-line interface utility

  Note: The lputil application cannot flash firmware on the LPe12 series HBAs. Use the elxvmware core kit for this operation on the LPe12000, LPe12002 and LPe1250 HBAs.

- Support for Common HBA API
- Supports NPort Id Virtualization (NPIV) Technology

New Features in this Release

Driver version 7.4.0.X for ESX includes the following enhancements:

- The “VMware Tools” link on the VMware portion of the Emulex® Web site. Visit the link to see the available tools.
- Support for the ANSI/INCITS t11 standard for NPIV deployment in ESX starting with release 3.5.
- For-midrange HBAs, the version 2.72a2 firmware increases the number of vports from 8 to 16.
- Update 1 includes the lpfc_pci_max_read parameter. See “Driver Configuration Parameters” on page 7 for more information.
- Supports the LPe12000, LPe12002 and LPe1250 HBAs at 2, 4 and 8 Gb/s.

Prerequisites

Emulex 7.4.0.X Driver Support in ESX Releases

The following table lists the support relationship between VMware ESX releases and Emulex drivers. Refer to VMware's vi3_io_guide_pdf for more detailed information.

Table 1: Emulex Driver Support in ESX Releases

VMware ESX Release	Emulex Driver Version
ESX 2.5.4	lpfc_7.3.2_vmw3 (4 Gb) provided with ESX 2.5.4 Patch 4
ESX 2.5.5	lpfc_7.3.2_vmw4 (2 and 4 Gb)
ESX 3.0.0	lpfc_7.1.14_vmw1 (2 Gb) lpfc_7.3.2_vmw1 (4 Gb)
ESX 3.0.1	lpfc_7.3.2_vmw2 (2 and 4 Gb)
ESX 3.0.2	lpfc_7.3.2_vmw4 (2 and 4 Gb)
ESX 3.5.0	lpfc_7.4.0.13 (2 and 4 Gb)
ESX 3.5 Update 1	lpfc_7.4.0.13-1 (2 and 4 Gb)
ESX 3.5 Update 2	lpfc_7.4.0.13-2 (2, 4, and 8 Gb)

Compatibility

- LPe12000, LPe12002 and LPe1250 (minimum firmware version 1.00a9. Minimum Emulex BIOS version 2.01a2.)
- LPe11000, LPe11002, LPe11004 and LPe1150 (recommended firmware version 2.72a2. Minimum Emulex BIOS version 2.01a2.)
- LP11000, LP11002 and LP1150 (recommended firmware version 2.72a2)
- LP1005DC-CM2 (minimum firmware version 1.92a1)
- LP10000ExDC and LP1050Ex (minimum firmware version 1.92a1)
- LP10000DC and LP10000 (minimum firmware version 1.92a1)
- LP1050DC and LP1050 (minimum firmware version 1.92a1)
- LP9802DC (minimum firmware version 1.92a1)
- LP9802 (minimum firmware version 1.92a1)
- LP982 (minimum firmware version 1.92a1)
- LP9002DC, LP9002L and LP9000 (minimum firmware version 3.93a0)
- LP952L (minimum firmware version 3.93a0)

Known Issues

For ESX 3.5.0

- Remote HBAnyware or hbacmd clients cannot manage ESX 3.5 systems using in-band management. These clients must be configured to manage ESX 3.5 systems using out-of-band management. (See the note in section 2 of the README, "Remote Management," for guidelines on configuring remote management.)
- If you use the hbacmd utility to perform in-band management, it will run slowly and fail with errors when managing HBAs installed in ESX 3.5 servers. The "listhbas" command appears to succeed, but it will not discover remote ESX 3.5 servers after a delay that is proportional to the number of HBAs in the SAN that are installed in ESX 3.5 servers.

- To perform out-of-band management using the hbacmd utility, specify the "h=" option with the IP address or DNS name of the target server. For example, to list the HBAs on the server sanhost1.example.com, use the following command:

  ```
  /usr/sbin/hbanyware/hbacmd h=sanhost1.example.com listhbas
  ```

- To list HBAs on the local system without performing in-band discovery, use the command with the "h" parameter to specify that only the local host should be queried:

  ```
  /usr/sbin/hbanyware/hbacmd h=localhost listhbas
  ```

- Emulex found that only 56 vports could be successfully created. Various FC switches handle high vports counts differently causing the vport login to fail. Emulex is targeting a subsequent release to fix this issue.
- At times, the switch name server maintains the device name after the vport sends a LOGO. This could be misleading for administrators looking at the name server database. Some switches require an explicit DA_ID ELS command to clean up the name server database; other switches do not. Emulex is targeting a subsequent release to address this issue.
- The lpfc_hba_queue_depth described in Table 2 is not settable as a module parameter in this release. Emulex is targeting a subsequent release to address this issue.For ESX 3.5.0 Update 1.
- Boot from SAN support on the LPe12 series HBAs requires the Emulex 2.01a2 BIOS. Emulex recommends version 1.00a9 as the minimum firmware revision.

Installing the Driver

All Emulex drivers ship inbox with the ESX release. All driver updates are issued by VMware's patch process and come with installation instructions. Please reference VMware's Support Web site for further details.

Installing the Utilities

Follow these instructions to install the Emulex HBAnyware Agent and lputil configuration utilities.

To install the HBAnyware Agent:

1. Log in as ‘root’.
2. Copy the elxvmwarecorekit-<kit version>.rpm file to a directory on the install machine.
3. CD to the directory to which you copied the rpm file.
4. Install the rpm. Type:

   ```
   rpm -i elxvmwarecorekit-<kit version>.i386.rpm
   ```

   For example:

   ```
   rpm -i elxvmwarecorekit-2.1a38-1.i386.rpm
   ```

   The rpm contents are installed in /usr/sbin/hbanyware. The hbacmd utility is also located in this directory. The README is installed in /usr/share/doc/elxvmwarecorekit-<kit version>.

To install lputil:

1. Download the lpfcutil-<kit version>.tgz kit from Emulex's VMware support page.
2. Move the lpfcutil-<kit version>.tgz file to a directory of your choice on the target machine.
3. Unpack the file. Type:

   ```
   tar -xvzf lpfcutil-<kit version>.tgz
   ```

For example:

```
tar -xvzf lpfcutil-7.3.2-3.tgz
```

4. Follow the installation instructions in the README file.

Uninstalling the Utilities

Follow these instructions to uninstall the Emulex configuration utilities.

To uninstall the HBAnyware Agent:

1. Log in as ‘root’.
2. Type "rpm -q elxvmwarecorekit" to verify that this kit is installed. This command should list "elxvmwarecorekit-<kit version>" for the current release.
3. Type:

   ```
   rpm -e elxvmwarecorekit-<kit version>
   ```

To uninstall lputil:

1. CD to the directory where the lpfcutil-<kit version>.tgz kit was originally unpacked.
2. Follow the removal instructions in the README file.

Configuration

Introduction

You can configure the driver parameters using native ESX tools or Emulex's HBAnyware and lputil configuration utilities. This document describes how to configure parameters using native ESX tools.

For a more comprehensive description of ESX tools, refer to the vi3_server_config.pdf documentation. If you have further questions, contact a VMware technical support representative.

Note: VMware does not officially support unloading the driver via vmkload_mod -u. If you must unload the driver, contact VMware customer support.

Refer to the Emulex HBAnyware and lputil User Manuals for more information about those utilities.

Note: NPIV port creation and deletion are performed by VMware's Infrastructure Client (VIC). Refer to VMware's Infrastructure Client documentation for more information.

Configuration Methods Using Native ESX Tools

There are four ways to configure the driver parameters:

- Permanently (global)
- Permanently (per adapter)
- Temporary (global)
- Temporary (per adapter)

Permanent Configuration Methods

Permanent configuration requires that the new values be saved in the ESX environment. These changes are considered permanent because they stay in effect across system reboots.

To make changes that impact all HBAs in the system (global changes), follow these steps. See "Driver Configuration Parameters" on page 7 for parameter names and values. Parameter values are hexadecimal and decimal.

1. From the CoS terminal window type:

   ```
   esxcfg-module -s "param=value param2=value..." <driver_name>
   ```

   The <driver_name> is obtained from the `vmkload_mod -l` call. Look for the "lpfc" prefix.
2. Rebuild the ESX bootstrap settings. Type:

   ```
   esxcfg-boot -b
   ```
3. Reboot the server. Type:

   ```
   reboot
   ```

Example of Permanent Global Configuration

The following example sets lun_queue_depth to 20 (default is 30) for all Emulex HBAs in your system.

1. Locate the parameter in Table 2 on page 7.
2. Set the permanent value. Type:

   ```
   esxcfg-module -s "lpfc_lun_queue_depth=20" <driver_name>
   ```

3. Rebuild the ESX bootstrap settings. Type:

   ```
   esxcfg-boot -b
   ```

4. Reboot the server. Type:

   ```
   reboot
   ```

   The new setting is used when the driver reloads.

   To verify the setting type:

   ```
   esxcfg-module -q
   ```

Example of Permanent Per Adapter Configuration

The following example sets lun_queue_depth to 20 (default is 30) for HBA #1.

1. Set the adapter specific value. Type:

   ```
   esxcfg-module -s "lpfc1_lun_queue_depth=20" <driver_name>
   ```

2. Rebuild the ESX bootstrap settings. Type:

   ```
   esxcfg-boot -b
   ```

3. Reboot the server. Type:

   ```
   reboot
   ```

   The new setting is used when the driver reloads.

   To verify the setting type:

   ```
   esxcfg-module -q
   ```

The following example sets lun_queue_depth to 20 (default is 30) for HBA #1 and lun_queue_depth to 10 (default is 30) for HBA #2.

1. Set the adapter specific value. Type:

   ```
   esxcfg-module -s "lpfc1_lun_queue_depth=20
   lpfc2_lun_queue_depth=10" <driver_name>
   ```

   Note: Type command all on one line without a carriage return.

2. Rebuild the ESX bootstrap settings. Type:

   ```
   esxcfg-boot -b
   ```

3. Reboot the server. Type:

   ```
   reboot
   ```

   The new settings are used when the driver reloads.

   To verify the settings type:

   ```
   esxcfg-module -q
   ```

Dynamically Add LUNs and Targets

For instructions on dynamically adding LUNs and targets, refer to VMware's vi3_esx_san_cfg.pdf, "Using Rescan" section.

Driver Configuration Parameters

All adapter-specific parameters have an lpfcX_ prefix (where X is the driver instance number); e.g., setting lpfc0_lun_queue_depth= 20 makes 20 the default number of maximum commands which can be sent to a single logical unit (disk) for lpfc instance 0.

Dynamic parameters do not require the driver to be unloaded and reloaded for changes to take effect.

Table 2: Driver Configuration Parameters

Variable	Default	Min	Max	Dynamic	Comments
lpfc_hba_queue_depth	8192	0	8192	Yes	Maximum number of FCP commands that can queue to an Emulex HBA.
lpfc_initiator_login	0	0	1	Yes	Enables logins to other virtual initiators.
lpfc_ack0	0	0=Off	1=On	No	Use ACK0 for class 2.
lpfc_automap	1	0=Off	1=On	No	Automatically assign SCSI IDs to FCP targets detected.
lpfc_check_cond_err	0	0=Off	1=On	Yes	Treat certain FCP check conditions as FCP RSP errors.
lpfc_cr_count	1	1	255	No	This parameter determines the values for I/O coalescing for cr_delay (msec) or cr_count outstanding commands.
lpfc_cr_delay	0	0	63	No	This parameter determines the values for I/O coalescing for cr_delay (msec) or cr_count outstanding commands.
lpfc_delay_rsp_err	0	0=Off	1=On	Yes	Treat FCP RSP errors like no-device-delay.
lpfc_discovery_threads	1	30	64	No	Specifies the maximum number of ELS commands that can be outstanding for a discovery.
lpfc_dqfull_throttle_up_inc	1	0	128	Yes	Amount to increment LUN queue depth each time.
lpfc_dqfull_throttle_up_time	1	0	30	Yes	Time interval, in seconds, to increment LUN queue depth.
lpfc_extra_io_tmo	0	0	255	Yes	Extra FCP cmd timeout when connected to a fabric (in seconds).
lpfc_fcp_bind_DID	inactive	N/A	N/A	No	Bind specific SCSI IDs to targets based on Fibre Channel (FC) Port ID.
lpfc_fcp_bind_method	2	1	4	No	Specifies the bind method (WWWN/WWPN/DID/ALPA map) to be used.

Table 2: Driver Configuration Parameters (Continued)

Variable	Default	Min	Max	Dynamic	Comments
lpfc_fcp_bind_WWNN	inactive	N/A	N/A	No	Bind specific SCSI IDs to targets based on FC WWNN.
lpfc_fcp_bind_WWPN	inactive	N/A	N/A	No	Bind specific SCSI IDs to targets based on FC WWPN.
lpfc_fcp_class	3	2	3	Yes	FC class for FCP data transmission.
lpfc_fdmi_on	0	0	2	No	False (0) if disabled. (1) or (2) if enabled depending on type of support needed.
lpfc_inq_pqb_filter	1	0=Off	1=On	No	If true, the driver changes the peripheral quantifier bit from 1 to 3 for inquiry responses.
lpfc_iocb_watchdog_tmo	40	0	55	No	Timeout value for pending FC I/O in the driver.
lpfc_linkdown_tmo	30	0	255	Yes	(seconds) How long the driver waits before deciding that the FC link is down.
lpfc_link_speed	0	0=auto select 1=1 Gb/s 2=2 Gb/s 4=4 Gb/s		No	Sets link speed.
lpfc_log_verbose	0x0	0x0	0xffff	Yes	(bit mask) Extra activity logging.
lpfc_lun_queue_depth	30	1	128	Yes	Default max commands sent to a single logical unit (disk).
lpfc_lun_skip	0	0=Off	1=On	No	Allows SCSI layers to detect all LUNs if there are LUN holes on a device.
lpfc_max_lun	256	1	256	Yes	Specifies the maximum number of LUNs per target. A value of 20 means LUNs from 0 to 19 are valid.
lpfc_max_target	256	1	256	No	This configuration parameter limits how many targets the driver will support.
lpfc_max_vpi	0xffff	0	0xffff	No	NPIV: Maximum number of vpis available per physical port.

Table 2: Driver Configuration Parameters (Continued)

Variable	Default	Min	Max	Dynamic	Comments
lpfc_nodev_holdio	0	0=Off	1=On	Yes	If the device disappears, hold I/O until it comes back.
lpfc_no_device_delay	1	0	30	Yes	Delay to fail back an I/O in seconds.
lpfc_nodev_tmo	30	0	255	Yes	Seconds to hold I/O err if device disappears.
lpfc_ns_threads	2	1	32	Yes	NPIV: Number of concurrent NameServer requests allowed to be outstanding.
lpfc_pci_max_read	0	0 = driver default 512 = 512 bytes 1024 = 1024 bytes 2048 = 2048 bytes 4096 = 4096 bytes		No	The maximum number of bytes transferred per pci DMA read. The default value 0 means the driver will automatically determine the correct value. (Update1 only.)
lpfc_peer_vport_login	0	0	1	Yes	NPIV: Allows peer Vports to log into each other.
lpfc_scan_down	1	0=Off	1=On	Yes	Select method for scanning ALPA to assign a SCSI ID.
lpfc_scsi_req_tmo	30	0	255	Yes	Time out value (in seconds) for SCSI passthrough requests.
lpfc_tgt_queue_depth	0	0	8192	Yes	Default max commands sent to a single target.
lpfc_topology	0	0x0=loop then P2P 0x2=P2P only 0x4=loop only 0x6=P2P then loop		No	FC link topology (defaults to loop, if it fails attempts point-to-point mode).
lpfc_use_adisc	0	0=Off	1=On	Yes	Send ADISC instead of PLOGI for device discovery or RSCN.
lpfc_xmt_que_size	256	128	8192	No	Number of outstanding IP commands for an adapter.

Creating a Fibre Channel Remote Boot Disk

For instructions on creating a Fibre Channel remote boot disk, refer to VMware's vi3_esx_san_cfg.pdf, "Chapter 6, Using Boot from SAN with ESX Server Systems".

Troubleshooting

Introduction

There are several circumstances in which your system may operate in an unexpected manner. The Troubleshooting section explains many of these circumstances and offers one or more workarounds for each situation.

Unusual Situations and Their Resolutions

General Situations

Table 3: General Situations

Situation	Resolution
hbacmd commands are running very slowly on the ESX Server.	Run all commands out-of-band. For example: /usr/sbin/hbanyware/hbacmd h=IP of host system listhbas Refer the HBAnyware User Manual for more information.
I added in the ESX Server Host IP address and I received an error "Host is unreachable or remote server is not running on host."	Verify hbanyware rpm is installed on your ESX server by running the following command: rpm -qa | grep elx This should return: elxvmwarecorekit-2.1a38-1 If it does not return the above kit, then you must install it. If the kit is installed, then you must open a port for HBAnyware to work on. esxcfg-firewall --openPort 23333,tcp,in,hbanyware esxcfg-firewall --openPort 23333,tcp,out,hbanyware Return to the HBAnyware GUI Client and add the ESX Host IP address again.
The HBAnyware GUI Client keeps losing its connection to the ESX HBAs.	On your HBAnyware GUI Client: 1. Click on **Discovery> Modify Settings**. 2. Check the **Manual Refresh** box under Fibre Channel and also under TCP/IP. 3. Check the **Never Remove** box under Expire Undiscovered HBA.
NPIV configuration not working as expected.	Contact Vmware Customer Support and reference VMware Support Documentation for their NPIV FAQ.

Table 3: General Situations (Continued)

Situation	Resolution
Emulex PCI-X HBAs and PCI-X bridge chipsets DMA size transfer issue	Sun, Emulex and VMware have worked together to identify an issue with certain PCI-X bridge chipsets. The issue is currently limited to Sun Fire X4100 and X4200 servers. **NOTE:** The Sun Fire X4100 M2 and X4200 M2 servers are not affected. The issue is centered around the size of a DMA transfer that works repeatedly and successfully from the AMD chipset versus the maximum DMA transfer size supported by the HBA. The primary symptoms are hung VMs and a large number of SCSI commands timed out by the Emulex driver. If you are experiencing these symptoms, please contact Vmware Technical Support for a supported driver that corrects the DMA transfer issue. In addition, the HBA may require a firmware upgrade. The minimum firmware revisions are: LP10000 series HBA - 1.92a1 LP11000 series HBA - 2.72a2 If you have any questions on the minimum firmware revision, contact Emulex Technical Support.

lpfc Log Messages

Introduction

Log messages are organized into logical groups based on code functionality within the Fibre Channel driver. Each group consists of a block of 100 log message numbers. Most groups require a single block of 100 message numbers, however some groups (INIT, FCP) require two blocks.

The groups and the associated number ranges are defined in the Message Log table below. The preamble string shown in the Message Log table is displayed as part of the log message. The lower case 'x' of the preamble string defines the severity of the log message. The 'x' will be replaced by one of five lower case letters. Those letters are defined in the Severity Code table.

Severity Codes

Information and warning messages can be turned ON or OFF by setting/resetting the appropriate mask bit(s) in the variable 'lpfc_log_verbose' located in the driver configuration module, lpfc.conf.c. By default, both information and warning messages are disabled. Configuration error (c), error (e), and panic (p) messages can not be disabled.

Table 4: Severity Code Table

Code	Severity
i	Information
w	Warning
c	Configuration Error

Table 4: Severity Code Table

Code	Severity
e	Error
p	Panic

Message Group Masks

Table 5 defines the log message groups and the associated number ranges.

- The preamble string shown in this table is displayed as part of the log message.
- The lower case 'x' of the preamble string defines the severity of the log message and represents one of five lower case letters defined in the severity codes table.

Table 5: Message Log Table

LOG Message Verbose Mask Definition	Preamble String	From	To	Verbose Bit	Verbose Description
LOG_ELS	ELx	0100	0199	0x1	ELS events
LOG_DISCOVERY	DIx	0200	0299	0x2	Link discovery events
LOG_MBOX LOG_SLI	MBx	0300	0399	0x4	Mailbox and SLI events
LOG_INIT	INx	0400	0499	0x8	Initialization events
Future		0500	0599		
LOG_FCP	FPx	0700	0799	0x40	FCP traffic history
Future		0800	0899		
LOG_NODE	NDx	0900	0999	0x80	Node table events
Reserved		1000	1099	0x100	
Reserved	TMx	1100	1199	0x200	
LOG_MISC	MIx	1200	1299	0x400	Miscellaneous events
LOG_LINK_EVENT	LKx	1300	1399	0x10	Link events
Future		1400	1499		
LOG_LIBDFC	IOx	1600	1699	0x2000	IOCTL events
LOG_VPORT	VPx	1800	1899	0x4000	Vport events
LOG_ALL_MSG				0xffff	Log all messages

Message Log Example

The following is an example of a LOG message:

```
Jul 12 16:30:26 <node> kernel: !lpfc0:0234:DIi:Device Discovery
completes
```

In the above LOG message:

- lpfc0 identifies the LOG message as coming from EMULEX HBA0.
- 0234 identifies the LOG message number.
- DIi identifies the LOG message as a DISCOVERY (DI) INFORMATION (i) message.

Note: If the word 'Data:' is present in a LOG message, any information to the right of 'Data:' is intended for Emulex technical support/engineering use only.

ELS Events (0100 - 0199)

lpfc_mes0100: FLOGI failure

DESCRIPTION: An ELS FLOGI command that was sent to the fabric failed.
DATA: (1) ulpStatus (2) ulpWord[4]
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0101: FLOGI completes successfully

DESCRIPTION: An ELS FLOGI command that was sent to the fabric succeeded.
DATA: (1) ulpWord[4] (2) e_d_tov (3) r_a_tov (4) edtovResolution
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0102: PLOGI completes to NPort <nlp_DID>

DESCRIPTION: The HBA performed a PLOGI into a remote NPort.
DATA: (1) ulpStatus (2) ulpWord[4] (3) disc (4) num_disc_nodes
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0103: PRLI completes to NPort <nlp_DID>

DESCRIPTION: The HBA performed a PRLI into a remote NPort.
DATA: (1) ulpStatus (2) ulpWord[4] (3) num_disc_nodes
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0104: ADISC completes to NPort <nlp_DID>

DESCRIPTION: The HBA performed an ADISC into a remote NPort.
DATA: (1) ulpStatus (2) ulpWord[4] (3) disc (4) num_disc_nodes
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0105: LOGO completes to NPort <nlp_DID>

DESCRIPTION: The HBA performed a LOGO to a remote NPort.
DATA: (1) ulpStatus (2) ulpWord[4] (3) num_disc_nodes
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0106: ELS cmd tag <ulpIoTag> completes

DESCRIPTION: The specific ELS command was completed by the firmware.
DATA: (1) ulpStatus (2) ulpWord[4]
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0107: Retry ELS command <elsCmd> to remote NPort <did>

DESCRIPTION: The driver is retrying the specific ELS command.
DATA: ((1) retry (2) delay
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0108: No retry ELS command <elsCmd> to remote NPort <did>

DESCRIPTION: The driver decided not to retry the specific ELS command that failed.
DATA: (1) retry (2) nlp_flag
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0109: ACC to LOGO completes to NPort <nlp_DID>

DESCRIPTION: The driver received a LOGO from a remote NPort and successfully issued an ACC response.
DATA: (1) nlp_flag (2) nlp_state (3) nlp_rpi
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0110: ELS response tag <ulpIoTag> completes

DESCRIPTION: The specific ELS response was completed by the firmware.
DATA: (1) ulpStatus (2) ulpWord[4] (3) nlp_DID (4) nlp_flag (5) nlp_state (6) nle.nlp_rpi
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0111: Dropping received ELS cmd

DESCRIPTION: The driver decided to drop an ELS Response ring entry.
DATA: (1) ulpStatus (2) ulpWord[4]
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver or firmware problem. If problems persist report these errors to Technical Support.

lpfc_mes0112: ELS command <elsCmd> received from Port <did>

DESCRIPTION: Received the specific ELS command from a remote NPort.
DATA: (1) fc_ffstate
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0113: An FLOGI ELS command <elsCmd> was received from DID <did> in Loop Mode

DESCRIPTION: While in Loop Mode an unknown or unsupported ELS command was received.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: Check device DID

lpfc_mes0114: PLOGI chkparm OK

DESCRIPTION: Received a PLOGI from a remote NPort and its Fibre Channel service parameters match this HBA. Request can be accepted.
DATA: (1) nlp_DID (2) nlp_state (3) nlp_flag (4) nlp_Rpi
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0115: Unknown ELS command <elsCmd> received from NPort <did>

DESCRIPTION: Received an unsupported ELS command from a remote NPort.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: Check remote NPort for potential problem.

lpfc_mes0116: Xmit ELS command <elsCmd> to remote NPort <did>

DESCRIPTION: Xmit ELS command to remote NPort.
DATA: (1) icmd->ulpIoTag (2) binfo->fc_ffstate
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0117: Xmit ELS response <elsCmd> to remote NPort <did>

DESCRIPTION: Xmit ELS response to remote NPort.
DATA: (1) icmd->ulpIoTag (2) size
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0118: Xmit CT response on exchange <xid>

DESCRIPTION: Xmit a CT response on the appropriate exchange.
DATA: (1) ulpIoTag (2) fc_ffstate
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0119: Issue GEN REQ IOCB for NPort <did>

DESCRIPTION: Issue a GEN REQ IOCB for remote NPort. These are typically used for CT requests.
DATA: (1) ulpIoTag (2) fc_ffstate
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0120: PLOGI chkparm OK

DESCRIPTION: Received a PLOGI from a remote NPort and its Fibre Channel service parameters match this HBA. Request can be accepted.
DATA: (1) nlp_DID (2) nlp_state (3) nlp_flag (4) nlp_Rpi
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0121: PLOGI chkparm OK

DESCRIPTION: Received a PLOGI from a remote NPort and its Fibre Channel service parameters match this HBA. Request can be accepted.
DATA: (1) nlp_DID (2) nlp_state (3) nlp_flag (4) nlp_Rpi
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0122: PLOGI chkparm OK

DESCRIPTION: Received a PLOGI from a remote NPort and its Fibre Channel service parameters match this HBA. Request can be accepted.
DATA: (1) nlp_DID (2) nlp_state (3) nlp_flag (4) nlp_Rpi
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0123: PLOGI chkparm OK

DESCRIPTION: Received a PLOGI from a remote NPort and its Fibre Channel service parameters match this HBA. Request can be accepted.
DATA: (1) nlp_DID (2) nlp_state (3) nlp_flag (4) nlp_Rpi
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0124: PLOGI chkparm OK

DESCRIPTION: Received a PLOGI from a remote NPort and its Fibre Channel service parameters match this HBA. Request can be accepted.
DATA:(1) nlp_DID (2) nlp_state (3) nlp_flag (4) nlp_Rpi
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0125: PLOGI chkparm OK

DESCRIPTION: Received a PLOGI from a remote NPort and its Fibre Channel service parameters match this HBA. Request can be accepted.
DATA: (1) nlp_DID (2) nlp_state (3) nlp_flag (4) nlp_Rpi
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0126: PLOGI chkparm OK

DESCRIPTION: Received a PLOGI from a remote NPort and its Fibre Channel service parameters match this HBA. Request can be accepted.
DATA: (1) nlp_DID (2) nlp_state (3) nlp_flag (4) nlp_Rpi
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational.

lpfc_mes0127: ELS timeout

DESCRIPTION: An ELS IOCB command was posted to a ring and did not complete within ULP timeout seconds.
DATA: (1) elscmd (2) did (3) ulpcommand (4) iotag
SEVERITY: Error
LOG: Always
ACTION: If no ELS command is going through the adapter, reboot the system. If problem persists, contact Technical Support.

lpfc_mes0128: FDISC ELS request failed

DESCRIPTION: A FDISC failed
DATA:
SEVERITY: Error
LOG: Always
ACTION: Make sure the switch supports NPIV. If problem persists, contact Technical Support.

lpfc_mes0129: FDISC ELS request succeeded

DESCRIPTION: A FDISC succeeded
DATA: (1) DID
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action need, informational.

lpfc_mes0130: Xmit Fabric LOGO ELS command to fabric

DESCRIPTION: A vport is sending a LOGO for its FDISC to the switch.
DATA: (1) vport DID (2) vport vpi (3) vport state
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational

lpfc_mes131: Fabric LOGO Completes

DESCRIPTION: The vport's fabric LOGO failed to complete successfully.
DATA: (1) vport DID (2) vport VPI (3) ulpStatus (4) iocb word 4
SEVERITY: Information
LOG: LOG_ELS verbose
ACTION: No action needed, informational

lpfc_mes132: Fabric acknowledging NPIV <0,1>

DESCRIPTION: If the fabric supports NPIV, a 1 is printed. 0 if not.
DATA: (1) max vpi (2) vpi_inuse
SEVERITY: Information
LOG: LOG ELS verbose
ACTION: No action needed, informational. However, if the fabric NPIV support is incorrect, contact Emulex Technical Support.

Link Discovery Events (0200 - 0299)

lpfc_mes0200: CONFIG_LINK bad hba state <hba_state>

DESCRIPTION: A CONFIG_LINK mbox command completed and the driver was not in the right state.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: Software driver error. If this problem persists, report these errors to Technical Support.

lpfc_mes0201: Abort outstanding I/O on NPort <nlp_DID>

DESCRIPTION: All outstanding I/Os are cleaned up on the specified remote NPort.
DATA: (1) nlp_flag (2) nlp_state (3) nle.nlp_rpi
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0202: Start Discovery hba state <hba_state>

DESCRIPTION: Device discovery / rediscovery after FLOGI, FAN or RSCN has started.
DATA: (1) tmo (2) fc_plogi_cnt (3) fc_adisc_cnt (4) fc_rscn_id_cnt
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0204: Create SCSI Target <tgt>

DESCRIPTION: A mapped FCP target was discovered and the driver has allocated resources for it.
DATA: None
SEVERITY: Information
LOG: LOG_DISCOVERY | LOG_FCP verbose
ACTION: No action needed, informational.

lpfc_mes0205: Create SCSI LUN <lun> on Target <tgt>

DESCRIPTION: A LUN on a mapped FCP target was discovered and the driver has allocated resources for it.
DATA: None
SEVERITY: Information
LOG: LOG_DISCOVERY | LOG_FCP verbose
ACTION: No action needed, informational.

lpfc_mes0206: Report Lun completes on NPort <nlp_DID>

DESCRIPTION: The driver issued a REPORT_LUN SCSI command to a FCP target and it completed.
DATA: (1) ulpStatus (2) rspStatus2 (3) rspStatus3 (4) nlp_failMask
SEVERITY: Information
LOG: LOG_DISCOVERY | LOG_FCP verbose
ACTION: No action needed, informational.

lpfc_mes0207: Issue Report LUN on NPort <nlp_DID>

DESCRIPTION: The driver issued a REPORT_LUN SCSI command to a FCP target.
DATA: (1) nlp_failMask (2) nlp_state (3) nlp_rpi
SEVERITY: Information
LOG: LOG_DISCOVERY | LOG_FCP verbose
ACTION: No action needed, informational.

lpfc_mes0208: Failmask change on NPort <nlp_DID>

DESCRIPTION: An event was processed that indicates the driver may not be able to communicate with the remote NPort.
DATA: (1) nlp_failMask (2) bitmask (3) flag
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0209: RFT request completes ulpStatus <ulpStatus> CmdRsp <CmdRsp>

DESCRIPTION: A RFT request that was sent to the fabric completed.
DATA: (1) nlp_failMask (2) bitmask (3) flag
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0210: Continue discovery with <num_disc_nodes> ADISCs to go

DESCRIPTION: A device discovery is in progress.
DATA: (1) fc_adisc_cnt (2) fc_flag (3) vport->port_state
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0211: DSM in event <evt> on NPort <nlp_DID> in state <cur_state>

DESCRIPTION: The driver Discovery State Machine is processing an event.
DATA: (1) nlp_flag
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0212: DSM out state <rc> on NPort <nlp_DID>

DESCRIPTION: The driver Discovery State Machine completed processing an event.
DATA: (1) nlp_flag
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0213: Reassign scsi id <sid> to NPort <nlp_DID>

DESCRIPTION: A previously bound FCP Target has been rediscovered and reassigned a SCSI ID.
DATA: (1) nlp_bind_type (2) nlp_flag (3) nlp_state (4) nlp_rpi
SEVERITY: Information
LOG: LOG_DISCOVERY | LOG_FCP verbose
ACTION: No action needed, informational.

lpfc_mes0214: RSCN received

DESCRIPTION: An RSCN ELS command was received from a fabric.
DATA: (1) fc_flag (2) i (3) lp (4) fc_rscn_id_cnt
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0215: RSCN processed

DESCRIPTION: An RSCN ELS command was received from a fabric and processed.
DATA: (1) fc_flag (2) cnt (3) fc_rscn_id_cnt (4) fc_ffstate
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0216: Assign scandown scsi id <sid> to NPort <nlp_DID>

DESCRIPTION: A SCSI ID is assigned due to BIND_ALPA.
DATA: (1) nlp_bind_type (2) nlp_flag (3) nlp_state (4) nlp_rpi
SEVERITY: Information
LOG: LOG_DISCOVERY | LOG_FCP verbose
ACTION: No action needed, informational.

lpfc_mes0217: Unknown Identifier in RSCN payload

DESCRIPTION: Typically the identifier in the RSCN payload specifies a domain, area or a specific Nport ID. If neither of these are specified, a warning will be recorded.
DATA: (1) didp->un.word
SEVERITY: Error
LOG: Always
ACTION: Potential problem with the fabric. Check with the fabric vendor.

lpfc_mes0218: FDMI Request

DESCRIPTION: The driver is sending an FDMI request to the fabric.
DATA: (1) fc_flag (2) hba_state (3) cmdcode
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0219: Issue FDMI request failed

DESCRIPTION: Cannot issue FDMI request to HBA.
DATA: (1) cmdcode
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0220: FDMI rsp failed

DESCRIPTION: An error response was received to FDMI request.
DATA:(1) SWAP_DATA16 (fdmi_cmd)
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: The fabric does not support FDMI, check fabric configuration.

lpfc_mes0221: FAN timeout

DESCRIPTION: A link up event was received without the login bit set, so the driver waits E_D_TOV for the fabric to send a FAN. If no FAN is received, a FLOGI will be sent after the timeout.
DATA: None
SEVERITY: Warning
LOG: LOG_DISCOVERY verbose
ACTION: None required. The driver recovers from this condition by issuing a FLOGI to the fabric.

lpfc_mes0222: Initial FLOGI timeout

DESCRIPTION: The driver sent the initial FLOGI to fabric and never got a response back.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: Check the fabric configuration. The driver recovers from this and continues with device discovery.

lpfc_mes0223: Timeout while waiting for NameServer login

DESCRIPTION: Our login request to the NameServer was not acknowledged within RATOV.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: Check the fabric configuration. The driver recovers from this and continues with device discovery.

lpfc_mes0224: NameServer Query timeout

DESCRIPTION: Node authentication timeout, node Discovery timeout. A NameServer Query to the fabric or discovery of reported remote NPorts is not acknowledged within R_A_TOV.
DATA: (1) fc_ns_retry (2) fc_max_ns_retry
SEVERITY: Error
LOG: Always
ACTION: Check the fabric configuration. The driver recovers from this and continues with device discovery.

lpfc_mes0225: Device Discovery completes

DESCRIPTION: This indicates successful completion of device (re)discovery after a link up.
DATA: None
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0226: Device discovery completion error

DESCRIPTION: This indicates that an uncorrectable error was encountered during device (re)discovery after a link up. Fibre Channel devices will not be accessible if this message is displayed.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: Reboot the system. If the problem persists, report the error to Technical Support. Run with verbose mode on for more details.

lpfc_mes0227: Node Authentication timeout

DESCRIPTION: The driver has lost track of what NPorts are being authenticated.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: None required. The driver should recover from this event.

lpfc_mes0228: CLEAR LA timeout

DESCRIPTION: The driver issued a CLEAR_LA that never completed.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: None required. The driver should recover from this event.

lpfc_mes0229: Assign scsi ID <sid> to NPort <nlp_DID>

DESCRIPTION: The driver assigned a SCSI ID to a discovered mapped FCP target.
DATA: (1) nlp_bind_type (2) nlp_flag (3) nlp_state (4) nlp_rpi
SEVERITY: Information
LOG: LOG_DISCOVERY | LOG_FCP verbose
ACTION: No action needed, informational.

lpfc_mes0230: Cannot assign scsi ID on NPort <nlp_DID>

DESCRIPTION: The driver cannot assign a SCSI ID to a discovered mapped FCP target.
DATA: (1) nlp_flag (2) nlp_state (3) nlp_rpi
SEVERITY: Information
LOG: LOG_DISCOVERY | LOG_FCP verbose
ACTION: Check persistent binding information.

lpfc_mes0231: RSCN timeout

DESCRIPTION: The driver has lost track of what NPorts have RSCNs pending.
DATA: (1) fc_ns_retry (2) fc_max_ns_retry
SEVERITY: Error
LOG: Always
ACTION: None required. The driver should recover from this event.

lpfc_mes0232: Continue discovery with <num_disc_nodes> PLOGIs to go

DESCRIPTION: Device discovery is in progress.
DATA: (1) fc_plogi_cnt (2) fc_flag (3) vport->port_state
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0234: ReDiscovery RSCN

DESCRIPTION: The number / type of RSCNs has forced the driver to go to the nameserver and re-discover all NPorts.
DATA: (1) fc_defer_rscn.q_cnt (2) fc_flag (3) hba_state
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0235: Deferred RSCN

DESCRIPTION: The driver has received multiple RSCNs and has deferred the processing of the most recent RSCN.
DATA: (1) fc_defer_rscn.q_cnt (2) fc_flag (3) hba_state
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0236: NameServer req

DESCRIPTION: The driver is issuing a NameServer request to the fabric.
DATA: (1) cmdcode (2) fc_flag (3) fc_rscn_id_cnt
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0237: Pending Link Event during Discovery

DESCRIPTION: Received link event during discovery. Causes discovery restart.
DATA: (1) hba_state (2) ulpIoTag (3) ulpStatus (4) ulpWord[4]
SEVERITY: Warning
LOG: LOG_DISCOVERY verbose
ACTION: None required unless problem persists. If persistent check cabling.

lpfc_mes0238: NameServer Rsp

DESCRIPTION: The driver received a NameServer response.
DATA: (1) Did (2) nlp_flag (3) fc_flag (4) fc_rscn_id_cnt
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0239: NameServer Rsp

DESCRIPTION: The driver received a NameServer response.
DATA: (1) Did (2) ndlp (3) fc_flag (4) fc_rscn_id_cnt
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0240: NameServer Rsp Error

DESCRIPTION: The driver received a NameServer response containing a status error.
DATA: (1) CommandResponse.bits.CmdRsp (2) ReasonCode (3) Explanation (4) fc_flag
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: Check the fabric configuration. The driver recovers from this and continues with device discovery.

lpfc_mes0241: NameServer rsp error

DESCRIPTION: The driver received a NameServer response containing a status error.
DATA: (1) CommandResponse.bits.CmdRsp (2) ReasonCode (3) Explanation (4) fc_flag
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: Check the fabric configuration. The driver recovers from this and continues with device discovery.

lpfc_mes0242: Abort outstanding I/O to the Fabric

DESCRIPTION: All outstanding I/Os to the fabric are cleaned up.
DATA: (1) Fabric_DID
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational

lpfc_mes0243: Issue FDMI request failed

DESCRIPTION: Cannot issue an FDMI request to HBA.
DATA: (1) cmdcode
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0244: Issue FDMI request failed

DESCRIPTION: Cannot issue an FDMI request to the HBA.
DATA: (1) cmdcode
SEVERITY: Information
LOG: LOG_Discovery verbose
ACTION: No action needed, informational.

lpfc_mes0245: ALPA based bind method used on an HBA which is in a nonloop topology

DESCRIPTION: ALPA based bind method used on an HBA which is not in a loop topology.
DATA: (1) topology
SEVERITY: Warning
LOG: LOG_DISCOVERY verbose
ACTION: Change the bind method configuration parameter of the HBA to 1(WWNN) or 2(WWPN) or 3(DID)

lpfc_mes0246: RegLogin failed

DESCRIPTION: The firmware returned a failure for the specified RegLogin.
DATA: Did, mbxStatus, hbaState
SEVERITY: Error
LOG: Always
ACTION: This message indicates that the firmware could not do RegLogin for the specified Did. There may be a limitation on how many nodes an HBA can see.

lpfc_mes0247: Start Discovery Timer state <hba_state>

DESCRIPTION: Start the device discovery / RSCN rescue timer.
DATA: (1) tmo (2) disctmo (3) fc_plogi_cnt (4) fc_adisc_cnt
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0248: Cancel Discovery Timer state <hba_state>

DESCRIPTION: Cancel the device discovery / RSCN rescue timer.
DATA: (1) fc_flag (2) rc (3) fc_plogi_cnt (4) fc_adisc_cnt
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational.

lpfc_mes0249: Unsupported Addressing Mode <i> on NPort <nlp_DID> Tgt <sid>

DESCRIPTION: The driver issued a REPORT_LUN SCSI command to a FCP target.
DATA: None
SEVERITY: Warning
LOG: LOG_DISCOVERY | LOG_FCP verbose
ACTION: Check configuration of target. Driver will default to peripheral addressing mode.

lpfc_mes0250: EXPIRED nodev timer

DESCRIPTION: A device disappeared for greater than the configuration parameter (lpfc_nodev_tmo) seconds. All I/O associated with this device will fail.
DATA: (1) dev_did (2) scsi_id (3) rpi
SEVERITY: Error
LOG: Always
ACTION: Check physical connections to Fibre Channel network and the state of the remote PortID.

lpfc_mes0251: Unrecognized event type while flushing task list

DESCRIPTION: The driver found an unsupported event type when flushing the event list.
DATA: (1) evt (2) arg1 (3) arg2
SEVERITY: Error
LOG: Always
ACTION: If this condition persists, contact Emulex Technical Support.

lpfc_mes0252: Unrecognized event type found in task list

DESCRIPTION: An event posted to the task list wasn't recognized.
DATA: (1) evt (2) arg1 (3) arg2
SEVERITY: Error
LOG: Always
ACTION: If this condition persists, contact Emulex Technical Support.

lpfc_mes0256: Start nodev timer

DESCRIPTION: A target disappeared from the Fibre Channel network. If the target does not return within nodev-tmo timeout all I/O to the target will fail.
DATA: (1) nlp_DID (2) nlp_flag (3) nlp_state (4) nlp
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational

lpfc_mes0260: Stop Nodev timeout on NPort <nlp_DID>

DESCRIPTION: The FCP target was rediscovered and I/O can be resumed.
DATA: (1) nlp_DID (2) nlp_flag (3) nlp_state (4) nlp
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational

lpfc_mes0262: NameServer Rsp Error

DESCRIPTION: The driver received a nameserver response containing a status error.
DATA: (1) CommandResponse.bits.CmdRsp (2) ReasonCode (3) Explanation (4) fc_flag
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: Check the fabric configuration. The driver recovers from this and continues with device discovery.

lpfc_mes0263: NameServer Rsp Error

DESCRIPTION: The driver received a nameserver response containing a status error.
DATA: (1) CommandResponse.bits.CmdRsp (2) ReasonCode (3) Explanation (4) fc_flag
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: Check the fabric configuration. The driver recovers from this and continues with device discovery.

lpfc_mes0261: FAN received

DESCRIPTION: A FAN was received from the fabric.
DATA: NONE
SEVERITY: Information
LOG: LOG_DISCOVERY verbose
ACTION: No action needed, informational

Mailbox Events (0300 - 0399)

lpfc_mes0300: READ_LA: no buffers

DESCRIPTION: The driver attempted to issue a READ_LA mailbox command to the HBA, but there were no buffers available.
DATA: None
SEVERITY: Warning
LOG: LOG_MBOX verbose
ACTION: This message indicates: (1) a possible lack of memory resources. Try increasing the lpfc 'num_bufs' configuration parameter to allocate more buffers. (2) A possible driver buffer management problem. If this problem persists, report the error to Technical Support.

lpfc_mes0301: READ_SPARAM: no buffers

DESCRIPTION: The driver attempted to issue a READ_SPARAM mailbox command to the HBA, but there were no buffers available.
DATA: None
SEVERITY: Warning
LOG: LOG_MBOX verbose
ACTION: This message indicates: (1) a possible lack of memory resources. Try increasing the lpfc 'num_bufs' configuration parameter to allocate more buffers. (2) A possible driver buffer management problem. If the problem persists, report the error to Technical Support.

lpfc_mes0302: REG_LOGIN: no buffers

DESCRIPTION: The driver attempted to issue a REG_LOGIN mailbox command to the HBA, but there were no buffers available.
DATA: None
SEVERITY: Warning
LOG: LOG_MBOX verbose
ACTION: This message indicates: (1) a possible lack of memory resources. Try increasing the lpfc 'num_bufs' configuration parameter to allocate more buffers. (2) A possible driver buffer management problem. If the problem persists, report the error to Technical Support.

lpfc_mes0304: Stray mailbox interrupt, mbxCommand <cmd> mbxStatus <status>

DESCRIPTION: Received a mailbox completion interrupt and there are no outstanding mailbox commands.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0305: Mbox cmd cmpl error - RETRYing

DESCRIPTION: A mailbox command completed with an error status that causes the driver to reissue the mailbox command.
DATA: (1) mbxCommand (2) mbxStatus (3) word1 (4) hba_state
SEVERITY: Information
LOG: LOG_MBOX verbose
ACTION: No action needed, informational.

lpfc_mes0306: CONFIG_LINK mbxStatus error <mbxStatus> HBA state <hba_state>

DESCRIPTION: The driver issued a CONFIG_LINK mbox command to the HBA that failed.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a firmware or hardware problem. Report these errors to Technical Support.

lpfc_mes0307: Mailbox Cmpl, wd0 <pmbox> wd1 <varWord> wd2 <varWord> cmpl <mbox_cmpl)

DESCRIPTION: A mailbox command completed.
DATA: None
SEVERITY: Information
LOG: LOG_MBOX verbose
ACTION: No action needed, informational.

lpfc_mes0308: Mbox cmd issue - BUSY

DESCRIPTION: The driver attempted to issue a mailbox command while the mailbox was busy processing the previous command. The processing of the new command will be deferred until the mailbox becomes available.
DATA: (1) mbxCommand (2) hba_state (3) sli_flag (4) flag
SEVERITY: Information
LOG: LOG_MBOX verbose
ACTION: No action needed, informational.

lpfc_mes0309: Mailbox cmd <cmd> issue

DESCRIPTION: The driver is in the process of issuing a mailbox command.
DATA: (1) hba_state (2) sli_flag (3) flag
SEVERITY: Information
LOG: LOG_MBOX verbose
ACTION: No action needed, informational.

lpfc_mes0310: Mailbox command <cmd> timeout

DESCRIPTION: A mailbox command was posted to the adapter and did not complete within 30 seconds.
DATA: (1) hba_state (2) sli_flag (3) mbox_active
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver or firmware problem. If no I/O is going through the adapter, reboot the system. If the problem persists, report the error to Technical Support.

lpfc_mes0311: Mailbox command <cmd> cannot issue

DESCRIPTION: The driver is in the wrong state to issue the specified command.
DATA: (1) hba_state (2) sli_flag (3) flag
SEVERITY: Information
LOG: LOG_MBOX verbose
ACTION: No action needed, informational.

lpfc_mes0312: Ring <ringno> handler: portRspPut <portRspPut> is bigger then rsp ring <portRspMax>

DESCRIPTION: The port rsp ring put index is larger than the size of the rsp ring.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver, firmware or hardware problem. Report these errors to Technical Support.

lpfc_mes0313: Ring <ringno> handler: unexpected Rctl <Rctl> Type <Type> received

DESCRIPTION: The Rctl/Type of a received frame did not match any for the configured masks for the specified ring.
DATA: (1) ring number (2) rctl (3) type
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver, firmware or hardware problem. Report these errors to Technical Support.

lpfc_mes0314: Ring <ringno> issue: portCmdGet <portCmdGet> is bigger then cmd ring <portCmdMax>

DESCRIPTION: The port cmd ring get index is greater than the size of cmd ring.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver, firmware or hardware problem. Report these errors to Technical Support.

lpfc_mes0315: Ring <ringno> issue: portCmdGet <portCmdGet> is bigger then cmd ring <portCmdMax>

DESCRIPTION: The port cmd ring get index is greater than the size of cmd ring.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver, firmware or hardware problem. Report these errors to Technical Support.

lpfc_mes0316: Cmd ring <ringno> put: iotag <iotag> greater then configured max <fast_iotag> wd0 <icmd>

DESCRIPTION: The assigned I/O iotag is greater than the allowed maximum.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver, firmware or hardware problem. Report these errors to Technical Support.

lpfc_mes0317: Rsp ring <ringno> get: iotag <iotag> greater then configured max <fast_iotag> wd0 <irsp>

DESCRIPTION: The assigned I/O iotag is greater than the maximum allowed.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver, firmware or hardware problem. Report these errors to Technical Support.

lpfc_mes0318: Outstanding I/O count for ring <ringno> is at max <fast_iotag>

DESCRIPTION: An I/O tag cannot be assigned because none are available. The maximum number of allowed I/Os are currently outstanding.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This message indicates the adapter HBA I/O queue is full. Typically this happens when heavy I/O is running on a low-end (3 digit) adapter. We suggest you upgrade to a higher-end adapter.

lpfc_mes0319: The driver issued a READ_SPARAM mbox command to the HBA that failed.

DESCRIPTION: The driver issued a READ_SPARAM mbox command to the HBA that failed.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a firmware or hardware problem. Report these errors to Technical Support.

lpfc_mes0320: CLEAR_LA mbxStatus error <mbxStatus> hba state <hba_state>

DESCRIPTION: The driver issued a CLEAR_LA mbox command to the HBA that failed.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a firmware or hardware problem. Report these errors to Technical Support.

lpfc_mes0321: Unknown IOCB command

DESCRIPTION: Received an unknown IOCB command completion.
DATA: (1) ulpCommand (2) ulpStatus (3) ulpIoTag (4) ulpContext)
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver or firmware problem. If these problems persist, report these errors to Technical Support.

lpfc_mes0322: Ring <ringno> handler: unexpected completion IoTag <IoTag>

DESCRIPTION: The driver could not find a matching command for the completion received on the specified ring.
DATA: (1) ulpStatus (2) ulpWord[4] (3) ulpCommand (4) ulpContext
SEVERITY: Error
LOG: LOG_SLI verbose
ACTION: This warning is benign during ELS disturbances and unexpected for FCP I/O. In the absence of any SAN disturbances, this error could indicate a software, driver or firmware problem. If problems persist report these errors to Technical Support.

lpfc_mes0323: Unknown Mailbox command <cmd> Cmpl

DESCRIPTION: A unknown mailbox command completed.
DATA: (1) Mailbox Command
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver, firmware or hardware problem. Report these errors to Technical Support.

lpfc_mes0324: Adapter initialization error, mbxCmd <cmd> READ_NVPARM, mbxStatus <status>

DESCRIPTION: A read nvparams mailbox command failed during port configuration.
DATA:(1) Mailbox Command (2) Mailbox Command Status
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver, firmware or hardware problem. Report these errors to Technical Support.

lpfc_mes0325: Rsp ring <ringno> error: IOCB

MESSAGE: Rsp ring <ringno> error: IOCB
DESCRIPTION: Received an IOCB response error.
DATA: (1) wd0 (2) wd1 (3) wd2 (4) wd3 (5) wd4 (6) wd5 (7) wd6 (8) wd7
SEVERITY: Warning
LOG: LOG_SLI verbose
ACTION: This error could indicate a software driver problem. If problems persist report these errors to Technical Support.

lpfc_mes0326: Reset HBA

MESSAGE: Reset HBA
DESCRIPTION: The HBA has been reset.
DATA: (1) hba_state (2) sli_flag
SEVERITY: Information
LOG: LOG_SLI verbose
ACTION: No action needed, informational

lpfc_mes0327: High priority IOCB cmd x%x completed in %d jiffies

MESSAGE: High priority IOCB cmd x%x completed in %d jiffies
DESCRIPTION: Make all high priority IOCBs completion times available to console.
DATA: (1) ulpCommand (2) wait time in jiffies
SEVERITY: Information
LOG: LOG_SLI
ACTION: No action needed, informational

lpfc_mes0328: High priority IOCB cmd x%x exceeded allotted wait time of %d jiffies

MESSAGE: High priority IOCB cmd x%x exceeded allotted wait time of %d jiffies
DESCRIPTION: The driver didn't get a completion for a high priority IOCB within the wait time allotted.
DATA: (1) ulpCommand (2) allotted wait time in jiffies
SEVERITY: Error
LOG: Always
ACTION: Depending on the ulpCommand and the associated task command, there could be an oversubscription condition in the SAN. If problems persist, report these error to Technical Support.

lpfc_mes0329: Ring %d handler: unexpected ASYNC_STATUS evt_code 0x%x

DESCRIPTION: The port has issued an unexpected asynchronous event code to the driver.
DATA: (1) ring_no (2) event code
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a driver or firmware problem. If problems persist, report these error to Technical Support.

lpfc_mes0330: Command IOCB lookup miss on Fast lookup array

MESSAGE: Command IOCB lookup miss on Fast lookup array
DESCRIPTION: The IoTag provided did not result in a valid command IOCB in the fast lookup array.
DATA: (1) IoTag (2) Ring number
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a driver or firmware problem. If problems persist, report these error to Technical Support.

lpfc_mes0331: Ring %d handler: unexpected ASYNC_STATUS iocb received evt_code 0x%x

DESCRIPTION: The port has issued an unexpected asynchronous IOCB with event code 0x%x to the driver.
DATA: (1) ring_no (2) event code
SEVERITY: Warning
LOG: LOG_SLI verbose
ACTION: This error could indicate a hardware/firmware problem. If problems persist, report these error to Technical Support.

lpfc_mes0332: REG_VPI failed

DESCRIPTION: reg_rpi mailbox failed
DATA: (1) status
SEVERITY: Error
LOG: Always
ACTION: Delete vports or increase lpfc_max_vpi

lpfc_mes0333: UNREG_VPI failed

DESCRIPTION: Unreg_vpi mailbox failed
DATA: (1) status
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a driver or firmware problem. If problems persist, report these error to Technical Support.

Initialization Events (0400 - 0499)

lpfc_mes0401: Detected Emulex PCI-X HBA

DESCRIPTION: An Emulex PCI-X HBA was detected during initialization.
DATA: (1) jedec_id (2) pci device id
Severity: Information
Log: LOG_INIT verbose
Action: No action needed, informational.

lpfc_mes0402: Max DMA Length mailbox command failed

DESCRIPTION: The driver could not set the limit the max DMA length.
DATA: (1) mbxCommand (2) mbxStatus
SEVERITY: Error
LOG: Always
ACTION: Check the FW revision and contact Technical Support.

lpfc_mes0403: Max DMA Length mailbox command successful

DESCRIPTION: The driver successfully set the max DMA length.
DATA: (1) mbxCommand (2) mbxStatus
SEVERITY: Information
LOG: LOG_INIT verbose
ACTION: No action needed, informational.

lpfc_mes0404: HBA setup complete - SLI rev <sli_rev>

DESCRIPTION: The driver finished configuring the HBA. Final setup values are written to the console.
DATA: (1) max_vpi (2) vpi_cnt (3) sli-3_options
SEVERITY: Information
LOG: LOG_INIT verbose
ACTION: No action needed, informational.

lpfc_mes0405: Service Level Interface (SLI) selected

DESCRIPTION: A CONFIG_PORT (SLI-2) mailbox command was issued.
DATA: (1) SLI Level
SEVERITY: Information
LOG: LOG_INIT verbose
ACTION: No action needed, informational.

lpfc_mes0410: Cannot find virtual addr for mapped buf on ring <num>

DESCRIPTION: The driver cannot find the specified buffer in its mapping table. Thus it cannot find the virtual address needed to access the data.
DATA: (1) first (2) q_first (3) q_last (4) q_cnt
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver or firmware problem. If problems persist report these errors to Technical Support.

lpfc_mes0411: fcp_bind_method is 4 with Persistent binding - ignoring fcp_bind_method

DESCRIPTION: The configuration parameter for fcp_bind_method conflicts with Persistent binding parameter.
DATA: (1) a_current (2) fcp_mapping
SEVERITY: Error config
LOG: Always
ACTION: Make necessary changes to the lpfc configuration file.

lpfc_mes0412: Scan-down is out of range - ignoring scan-down

DESCRIPTION: The configuration parameter for scan-down is out of range.
DATA: (1) clp[CFG_SCAN_DOWN].a_current (2) fcp_mapping
SEVERITY: Error
LOG: Always
ACTION: Make necessary changes to the lpfc configuration file.

lpfc_mes0413: Configuration parameter out of range, resetting to default value

DESCRIPTION: User is attempting to set a configuration parameter to a value not supported by the driver. Resetting the configuration parameter to the default value.
DATA: (1) a_string (2) a_low (3) a_hi (4) a_default
SEVERITY: Error config
LOG: Always
ACTION: Make necessary changes to the lpfc configuration file.

lpfc_mes0430: WWPN binding entry <num>: syntax error code <code>

DESCRIPTION: A syntax error occurred while parsing WWPN binding configuration information.
DATA: None
Detail: Binding syntax error codes
0 FC_SYNTAX_OK
1 FC_SYNTAX_OK_BUT_NOT_THIS_BRD
2 FC_SYNTAX_ERR_ASC_CONVERT
3 FC_SYNTAX_ERR_EXP_COLON
4 FC_SYNTAX_ERR_EXP_LPFC
5 FC_SYNTAX_ERR_INV_LPFC_NUM
6 FC_SYNTAX_ERR_EXP_T
7 FC_SYNTAX_ERR_INV_TARGET_NUM
8 FC_SYNTAX_ERR_EXP_D
9 FC_SYNTAX_ERR_INV_DEVICE_NUM
10 FC_SYNTAX_ERR_INV_RRATIO_NUM
11 FC_SYNTAX_ERR_EXP_NULL_TERM
SEVERITY: Error config
LOG: Always
ACTION: Make necessary changes to the lpfc configuration file.

lpfc_mes0431: WWNN binding entry <num>: syntax error code <code>

DESCRIPTION: A syntax error occurred while parsing WWNN binding configuration information.
DATA: None
Detail: Binding syntax error codes
0 FC_SYNTAX_OK
1 FC_SYNTAX_OK_BUT_NOT_THIS_BRD
2 FC_SYNTAX_ERR_ASC_CONVERT
3 FC_SYNTAX_ERR_EXP_COLON
4 FC_SYNTAX_ERR_EXP_LPFC
5 FC_SYNTAX_ERR_INV_LPFC_NUM
6 FC_SYNTAX_ERR_EXP_T
7 FC_SYNTAX_ERR_INV_TARGET_NUM
8 FC_SYNTAX_ERR_EXP_D
9 FC_SYNTAX_ERR_INV_DEVICE_NUM
10 FC_SYNTAX_ERR_INV_RRATIO_NUM
11 FC_SYNTAX_ERR_EXP_NULL_TERM
SEVERITY: Error config
LOG: Always
ACTION: Make necessary changes to the lpfc configuration file.

lpfc_mes0432: WWPN binding entry: node table full

DESCRIPTION: More bindings entries were configured than the driver can handle.
DATA: None
SEVERITY: Error config
LOG: Always
ACTION: Make necessary changes to the lpfc configuration file so that fewer bindings are configured.

lpfc_mes0433: WWNN binding entry: node table full

DESCRIPTION: More bindings entries were configured than the driver can handle.
DATA: None
SEVERITY: Error config
LOG: Always
ACTION: Make necessary changes to the lpfc configuration file so that fewer bindings are configured.

lpfc_mes0434: DID binding entry <num>: syntax error code <code>

DESCRIPTION: A syntax error occurred while parsing DID binding configuration information.
DATA: None
Detail: Binding syntax error codes
0 FC_SYNTAX_OK
1 FC_SYNTAX_OK_BUT_NOT_THIS_BRD
2 FC_SYNTAX_ERR_ASC_CONVERT
3 FC_SYNTAX_ERR_EXP_COLON
4 FC_SYNTAX_ERR_EXP_LPFC
5 FC_SYNTAX_ERR_INV_LPFC_NUM
6 FC_SYNTAX_ERR_EXP_T
7 FC_SYNTAX_ERR_INV_TARGET_NUM
8 FC_SYNTAX_ERR_EXP_D
9 FC_SYNTAX_ERR_INV_DEVICE_NUM
10 FC_SYNTAX_ERR_INV_RRATIO_NUM
11 FC_SYNTAX_ERR_EXP_NULL_TERM
SEVERITY: Error config
LOG: Always
ACTION: Make necessary changes to the lpfc configuration file.

lpfc_mes0435: DID binding entry: node table full

DESCRIPTION: More bindings entries were configured than the driver can handle.
DATA: None
SEVERITY: Error config
LOG: Always
ACTION: Make necessary changes to the lpfc configuration file so that fewer bindings are configured.

lpfc_mes0436: Adapter failed to init, timeout, status reg <status>

DESCRIPTION: The adapter failed during powerup diagnostics after it was reset.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0437: Adapter failed to init, chipset, status reg <status>

DESCRIPTION: The adapter failed during powerup diagnostics after it was reset.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0438: Adapter failed to init, chipset, status reg <status>

DESCRIPTION: The adapter failed during powerup diagnostics after it was reset.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0439: Adapter failed to init, mbxCmd <cmd> READ_REV, mbxStatus <status>

DESCRIPTION: Adapter initialization failed when issuing a READ_REV mailbox command.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0440: Adapter failed to init, mbxCmd <cmd> READ_REV, detected outdated firmware

DESCRIPTION: Outdated firmware was detected during initialization.
DATA: (1) read_rev_reset
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. Update the firmware. If the problem persists, report the error to Technical Support.

lpfc_mes0441: VPD not present on adapter, mbxCmd <cmd> DUMP VPD, mbxStatus <status>

DESCRIPTION: The DUMP_VPD mailbox command failed.
DATA: None
SEVERITY: Information
LOG: LOG_INIT verbose
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0442: Adapter failed to init, mbxCmd <cmd> CONFIG_PORT, mbxStatus <status>

DESCRIPTION: Adapter initialization failed when issuing a CONFIG_PORT mailbox command.
DATA: (1) hbainit
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0443: Failed to attach to lpfc adapter: bus <bus> device <device> irq <irq>

DESCRIPTION: An lpfc adapter was found in the PCI config but the lpfc driver failed to attach.
DATA: (1) bus (2) device (3) irq
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If problems persist report these errors to Technical Support.

lpfc_mes0446: Adapter failed to init, mbxCmd <cmd> CFG_RING, mbxStatus <status>, ring <num>

DESCRIPTION: Adapter initialization failed when issuing a CFG_RING mailbox command.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0447: Adapter failed init, mbxCmd <cmd> CONFIG_LINK mbxStatus <status>

DESCRIPTION: Adapter initialization failed when issuing a CONFIG_LINK mailbox command.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0448: Adapter failed to init, mbxCmd <cmd> READ_SPARM, mbxStatus <status>

DESCRIPTION: Adapter initialization failed when issuing a READ_SPARM mailbox command.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0451: Enable interrupt handler failed

DESCRIPTION: The driver attempted to register the HBA interrupt service routine with the host operating system, but failed.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or driver problem. If the problem persists, report the error to Technical Support.

lpfc_mes0452: Adapter failed to init, mbxCmd <cmd> CONFIG_HBQ, mbxStatus <status>

DESCRIPTION: Adapter initialization failed when issuing CONFIG_HBQ mailbox command.
DATA: (1) mbx_Command (2) mbx_Status (3) hbq entry
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If problems persist report these errors to Technical Support.

lpfc_mes0453: Adapter failed to init, mbxCmd <cmd> READ_CONFIG, mbxStatus <status>

DESCRIPTION: Adapter initialization failed when issuing a READ_CONFIG mailbox command.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0454: Adapter failed to init, mbxCmd <cmd> INIT_LINK, mbxStatus <status>

DESCRIPTION: Adapter initialization failed when issuing an INIT_LINK mailbox command.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0455: Vital Product

DESCRIPTION: Vital product data (VPD) contained in the HBA flash.
DATA: (1) vpd[0] (2) vpd[1] (3) vpd[2] (4) vpd[3]
SEVERITY: Information
LOG: LOG_INIT verbose
ACTION: No action needed, informational.

lpfc_mes0456: Adapter failed to issue ASYNCEVT_ENABLE mbox

DESCRIPTION: The HBA port failed to enable asynchronous mailbox events.
DATA: (1) mailbox response status
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If problems persist report these errors to Technical Support.

lpfc_mes0457: Adapter Hardware Error

DESCRIPTION: The driver received an interrupt indicating a possible hardware problem.
Data: (1) status (2) status1 (3) status2
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If the problem persists, report the error to Technical Support.

lpfc_mes0458: Bring adapter online

DESCRIPTION: The FC driver has received a request to bring the adapter online. This may occur when running lputil.
DATA: None
SEVERITY: Warning
LOG: LOG_INIT verbose
ACTION: None required.

lpfc_mes0459: HBA heartbeat failure

DESCRIPTION: The hba has not responded to a heartbeat command in the time allotted.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If problems persist report these errors to Technical Support.

lpfc_mes0460: Bring adapter offline

DESCRIPTION: The FC driver has received a request to bring the adapter offline. This may occur when running lputil.
DATA: None
SEVERITY: Warning
LOG: LOG_INIT verbose
ACTION: None required.

lpfc_mes0462: Too many cmd / rsp ring entries in SLI-2 SLIM

DESCRIPTION: The configuration parameter for Scan-down is out of range.
DATA: (1) totiocb (2) MAX_SLI-2_IOCB
SEVERITY: Error
LOG: Always
ACTION: This is a software driver error. If this problem persists, report these errors to Technical Support.

lpfc_mes0463: Port max temp exceeded <temp>, taking port offline

DESCRIPTION: The hba port is in an overtemperature condition and must be shutdown.
DATA: (1) status (2) status1 (3) status2
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a hardware or firmware problem. If problems persist report these errors to Technical Support.

FCP Traffic History (0700 - 0799)

lpfc_mes071: Issue Abort Task Set to TGT <num> LUN <num>

DESCRIPTION: The SCSI layer detected that it needs to abort all I/O to a specific device. This causes the FCP Task Management command to abort the I/O in progress.
DATA: (1) rpi (2) flags
SEVERITY: Information
LOG: LOG_FCP verbose
ACTION: Check the state of the device in question.

lpfc_mes0702: Issue Target Reset to TGT <num>

DESCRIPTION: The SCSI layer detected that it needs to abort all I/O to a specific target. This results in an FCP Task Management command to abort the I/O in progress.
DATA: (1) rpi (2) flags
SEVERITY: Information
LOG: LOG_FCP verbose
ACTION: Check the state of the target in question.

lpfc_mes0703: Issue LUN Reset to TGT <num> LUN <num>

DESCRIPTION: The SCSI layer detected that it must abort all I/O to a specific device. This results in an FCP Task Management command to abort the I/O in progress.
DATA: (1) rpi (2) flags
SEVERITY: Information
LOG: LOG_FCP verbose
ACTION: Check the state of the device in question.

lpfc_mes0712: SCSI layer issued abort device

DESCRIPTION: The SCSI layer is requesting the driver to abort I/O to a specific device.
DATA: (1) target (2) lun (3) lpfc_cmd (4) cur_iocbq
SEVERITY: Error
LOG: Always
ACTION: Check the state of the device in question.

lpfc_mes0714: SCSI layer issued bus reset

DESCRIPTION: The SCSI layer is requesting the driver to abort all I/Os to all targets on this HBA.
DATA: (1) scsi_id (2) lun_id (3) status
SEVERITY: Error
LOG: Always
ACTION: Check the state of the targets in question.

lpfc_mes0716: FCP residual underrun, expected <len>, residual <resid>

DESCRIPTION: An FCP device provided less data than was requested.
DATA: (1) fcpi_parm (2) cmnd[0] (3) underflow
SEVERITY: Information
LOG: LOG_FCP verbose
ACTION: None required.

lpfc_mes0717: FCP command <cmd> residual underrun converted to error

DESCRIPTION: The driver converted this underrun condition to an error based on the underflow field in the SCSI command.
DATA: (1) len (2) resid (3) underflow
SEVERITY: Information
LOG: LOG_FCP verbose
ACTION: None required.

lpfc_mes0729: FCP cmd <cmnd> failed <target>/<lun>

DESCRIPTION: The specified device failed an FCP command.
DATA: (1) cmds (2) scsi_id (3) lun_id (4) status (5) result (6) iotag
SEVERITY: Warning
LOG: LOG_FCP verbose
ACTION: Check the state of the target in question.

lpfc_mes0730: FCP command failed: RSP

DESCRIPTION: The FCP command failed with a response error.
DATA: (1) Status2 (2) Status3 (3) ResId (4) SnsLen (5) RspLen (6) Info3
SEVERITY: Warning
LOG: LOG_FCP verbose
ACTION: Check the state of the target in question.

lpfc_mes0734: FCP read check error

DESCRIPTION: The issued FCP command returned a read check error.
DATA: (1) fcpDl (2) rspResId (3) fcpi_parm (4) cdb[0]
SEVERITY: Warning
LOG: LOG_FCP verbose
ACTION: Check the state of the target in question.

lpfc_mes0735: FCP read check error with check condition

DESCRIPTION: The issued FCP command returned a read check error and a check condition.
DATA: (1) fcpDl (2) rspResId (3) fcpi_parm (4) cdb[0]
SEVERITY: Warning
LOG: LOG_FCP verbose
ACTION: Check the state of the target in question.

lpfc_mes0736: Received Queue Full status from FCP device <tgt> <lun>

DESCRIPTION: Received a Queue Full error status from specified FCP device.
DATA: (1) qfull_retry_count (2) qfull_retries (3) currentOutstanding (4) maxOutstanding
SEVERITY: Information
LOG: LOG_FCP verbose
ACTION: None required.

lpfc_mes0737: <ASC ASCQ> Check condition received

DESCRIPTION: The issued FCP command resulted in a check condition.
DATA: (1) CFG_CHK_COND_ERR (2) CFG_DELAY_RSP_ERR (3) *lp
SEVERITY: Information
LOG: LOG_FCP | LOG_CHK_COND verbose
ACTION: None required.

lpfc_mes0747: Cmpl target reset

DESCRIPTION: Target reset completed.
DATA: (1) scsi_id (2) lun_id (3) status
SEVERITY: Information
LOG: LOG_FCP verbose
ACTION: None required.

lpfc_mes0748: Cmpl LUN reset

DESCRIPTION: LUN reset completed.
DATA: (1) scsi_id (2) lun_id (3) status (4) command frag
SEVERITY: Information
LOG: LOG_FCP verbose
ACTION: None required.

lpfc_mes0749: Cmpl abort task set

DESCRIPTION: Abort task set completed.
DATA: (1) scsi_id (2) lun_id (3) cmpl time mS
SEVERITY: Information
LOG: LOG_FCP verbose
ACTION: None required.

lpfc_mes0750: Failed Abort Task Set Data: x%x x%ld

DESCRIPTION: Abort Task Set completed.
DATA: (1) tgt id (2) lun id (3) timeout mS
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver problem. If problems persist report these errors to Technical Support.

lpfc_mes0754: SCSI timeout

DESCRIPTION: An FCP IOCB command was posted to a ring and did not complete within ULP timeout seconds.
DATA:(1) did (2) sid (3) command (4) iotag
SEVERITY: Error
LOG: Always
ACTION: If I/O is not going through the adapter, reboot the system; otherwise check the state of the target in question.

Node Table Events (0900 - 0999)

lpfc_mes0900: Cleanup node for NPort <nlp_DID>

DESCRIPTION: The driver node table entry for a remote NPort was removed.
DATA: (1) nlp_flag (2) nlp_state (3) nlp_rpi
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0901: FIND node DID mapped

DESCRIPTION: The driver is searching for a node table entry, on the mapped node list, based on the DID.
DATA: (1) nlp (2) nlp_DID (3) nlp_flag (4) data1
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0902: FIND node DID mapped

DESCRIPTION: The driver is searching for a node table entry, on the mapped node list, based on DID.
DATA: (1) nlp (2) nlp_DID (3) nlp_flag (4) data1
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0903: Add scsiid <sid> to BIND list

DESCRIPTION: The driver is putting the node table entry on the binding list.
DATA: 1) bind_cnt (2) nlp_DID (3) bind_type (4) blp
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0904: Add NPort <did> to PLOGI list

DESCRIPTION: The driver is putting the node table entry on the plogi list.
DATA: (1) plogi_cnt (2) blp
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0905: Add NPort <did> to ADISC list

DESCRIPTION: The driver is putting the node table entry on the adisc list.
DATA: (1) adisc_cnt (2) blp
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0906: Add NPort <did> to UNMAP list

DESCRIPTION: The driver is putting the node table entry on the unmap list.
DATA: (1) unmap_cnt (2) blp
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0907: Add NPort <did> to MAP list scsiid <sid>

DESCRIPTION: The driver is putting the node table entry on the mapped list.
DATA: (1) map_cnt (2) blp
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0908: FIND node DID bind

DESCRIPTION: The driver is searching for a node table entry, on the binding list, based on DID.
DATA: (1) nlp (2) nlp_DID (3) nlp_flag (4) data1
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0910: FIND node DID unmapped

DESCRIPTION: The driver is searching for a node table entry on the unmapped node list, based on the SCSI ID.
DATA: (1) nlp (2) nlp_DID (3) nlp_flag (4) data1
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0911: FIND node DID unmapped

DESCRIPTION: The driver is searching for a node table entry, on the unmapped node list, based on DID.
DATA: (1) nlp (2) nlp_DID (3) nlp_flag (4) data1
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0929: FIND node DID unmapped

DESCRIPTION: The driver is searching for a node table entry, on the unmapped node list, based on DID.
DATA: (1) nlp (2) nlp_DID (3) nlp_flag (4) data1
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0930: FIND node DID mapped

DESCRIPTION: The driver is searching for a node table entry, on the mapped node list, based on DID.
DATA: (1) nlp (2) nlp_DID (3) nlp_flag (4) data1
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0931: FIND node DID bind

DESCRIPTION: The driver is searching for a node table entry, on the binding list, based on DID.
DATA: (1) nlp (2) nlp_DID (3) nlp_flag (4) data1
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

lpfc_mes0932: FIND node did <did> NOT FOUND

DESCRIPTION: The driver was searching for a node table entry based on the DID and the entry was not found.
DATA: (1) order
SEVERITY: Information
LOG: LOG_NODE verbose
ACTION: None required.

Miscellaneous Events (1200 - 1299)

lpfc_mes1208: C_CT request error

DESCRIPTION: The CT response returned more data than the user buffer could hold.
DATA: (1) dfc_flag (2) 4096
SEVERITY: Information
LOG: LOG_MISC verbose
ACTION: Modify the user application issuing a CT request to allow for a larger response buffer.

lpfc_mes1210: Convert ASC to hex. Input byte cnt <1

DESCRIPTION: ASCII string to hexadecimal conversion failed. The input byte count is greater than 1.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver problem. If the problem persists, report the error to Technical Support.

lpfc_mes1212: Convert ASC to hex. Output buffer too small

DESCRIPTION: ASCII string to hexadecimal conversion failed. The output buffer byte size is less than 1/2 of the input byte count. Every two input characters (bytes) require one output byte.
DATA: None
SEVERITY: Error
LOG: Always
ACTION: This error could indicate a software driver problem. If the problem persists, report the error to Technical Support.

lpfc_mes1213: Convert ASC to hex. Input char seq not ASC hex

DESCRIPTION: The ASCII hexadecimal input string contains a non-ASCII hex character.
DATA: None
SEVERITY: Error configuration
LOG: Always
ACTION: Make necessary changes to the lpfc configuration file.

Link Events (1300 - 1399)

lpfc_mes1300: Re-establishing Link, timer expired

DESCRIPTION: The driver detected a condition where it had to re-initialize the link.
DATA: (1) fc_flag (2) fc_ffstate
SEVERITY: Error
LOG: Always
ACTION: If numerous link events are occurring, check the physical connections to the Fibre Channel network.

lpfc_mes1301: Re-establishing Link

DESCRIPTION: The driver detected a condition in which it had to re-initialize the link.
DATA: (1) status (2) status1 (3) status2
SEVERITY: Information
LOG: LOG_LINK_EVENT verbose
ACTION: If numerous link events are occurring, check the physical connections to the Fibre Channel network.

lpfc_mes1302: Reset link speed to auto. 1G HBA cfg'd for 2G

DESCRIPTION: The driver is reinitializing the link speed to auto-detect.
DATA: (1) current link speed
SEVERITY: Warning
LOG: LOG_LINK_EVENT verbose
ACTION: None required.

lpfc_mes1303: Link Up Event <eventTag> received

DESCRIPTION: A link up event was received. It is also possible for multiple link events to be received together.
DATA:(1) fc_eventTag (2) granted_AL_PA (3) UlnkSpeed (4) alpa_map[0]
Detail: If link events received, log (1) last event number received, (2) ALPA granted, (3) Link speed (4) number of entries in the loop init LILP ALPA map. An ALPA map message is also recorded if LINK_EVENT verbose mode is set. Each ALPA map message contains 16 ALPAs.
SEVERITY: Error
LOG: Always
ACTION: If numerous link events are occurring, check the physical connections to the Fibre Channel network.

lpfc_mes1304: Link Up Event ALPA map

DESCRIPTION: A link up event was received.
DATA: (1) wd1 (2) wd2 (3) wd3 (4) wd4
SEVERITY: Warning
LOG: LOG_LINK_EVENT verbose
ACTION: If numerous link events are occurring, check the physical connections to the Fibre Channel network.

lpfc_mes1305: Link Down Event <eventTag> received

DESCRIPTION: A link down event was received.
DATA: (1) fc_eventTag (2) hba_state (3) fc_flag
SEVERITY: Error
LOG: Always
ACTION: If numerous link events are occurring, check the physical connections to the Fibre Channel network.

lpfc_mes1306: Link Down timeout

DESCRIPTION: The link was down for greater than the configuration parameter (lpfc_linkdown_tmo) in seconds. All I/O associated with the devices on this link will fail.
DATA: (1) hba_state (2) fc_flag (3) fc_ns_retry
SEVERITY: Warning
LOG: LOG_LINK_EVENT | LOG_DISCOVERY verbose
ACTION: Check the HBA cable/connection to the Fibre Channel network.

lpfc_mes1307: READ_LA mbox error <mbxStatus> state <hba_state>

DESCRIPTION: The driver cannot determine what type of link event occurred.
DATA: None
SEVERITY: Information
LOG: LOG_LINK_EVENT verbose
ACTION: If numerous link events are occurring, check the physical connections to the Fibre Channel network. May indicate a possible hardware or firmware problem.

LIBDFC Events (1600 - 1699)

lpfc_mes1600: dfc_ioctl entry

DESCRIPTION: The entry point for processing diagnostic ioctl.
DATA:(1) c_cmd (2) c_arg1 (3) c_arg2 (4) c_outsz
SEVERITY: Information
LOG: LOG_IP verbose
ACTION: None required.

lpfc_mes1601: dfc_ioctl exit

DESCRIPTION: The exit point for processing diagnostic ioctl.
DATA: (1) rc (2) c_outsz (3) c_dataout
SEVERITY: Information
LOG: LOG_IP verbose
ACTION: None required.

lpfc_mes1602: libdfc hbaapi entry

DESCRIPTION: Entry point for processing hbaapi diagnostic routines.
DATA: (1) c_cmd (2) c_arg1 (3) c_arg2 (4) c_outsz
SEVERITY: Information
LOG: LOG_LIBDFC verbose
ACTION: No action needed, informational

lpfc_mes1603: libdfc hbaapi exit

DESCRIPTION: Exit point for processing hbaapi diagnostic routines.
DATA: (1) rc (2) c_outsz (3) c_dataout
SEVERITY: Information
LOG: LOG_LIBDFC verbose
ACTION: No action needed, informational

lpfc_mes1604: lpfc_ioctl:error

DESCRIPTION: The SCSI send request buffer size limit was exceeded.
DATA: (1) error number index
SEVERITY: Error
LOG: Always
ACTION: Reduce the application program's SCSI send request buffer size to less then 320K bytes.

lpfc_mes1605: Issue Report LUN on NPort <nlp_DID>

DESCRIPTION: The driver issued an Ioctl REPORT_LUN SCSI command to a FCP target.
DATA: (1) nlp_failMask (2) nlp_state (3) nlp_rpi
SEVERITY: Information
LOG: LOG_IOC verbose
ACTION: None required.

lpfc_mes1606: libdfc util entry

DESCRIPTION: Entry point for processing util diagnostic routines.
DATA: (1) c_cmd (2) c_arg1 (3) c_arg2 (4) c_outsz
SEVERITY: Information

LOG: LOG_LIBDFC verbose
ACTION: No action needed, informational

lpfc_mes1607: libdfc util exit

DESCRIPTION: Exit point for processing util diagnostic routines.
DATA: (1) rc (2) c_outsz (3) c_dataout
SEVERITY: Information
LOG: LOG_LIBDFC verbose
ACTION: No action needed, informational

Vport Events (1800-1899)

lpfc_mes1800: Failed to create vport. Insufficient VPIs

DESCRIPTION: There are no VPIs available to create a vport. Either the physical port does not support VPIs or all available VPIs are in use.
DATA: (1) vpi (2) max_vpi (3) vpi_cnt
SEVERITY: Error
LOG: Always
ACTION: Delete unused/unneeded vports. If problems persist, report error to Emulex Technical Support.

lpfc_mes1801: Failed to create vport. Incorrect SLI revision

DESCRIPTION: The FW must report SLI-3 capable for vport creation.
DATA: (1) sli_rev
SEVERITY: Warning
LOG: LOG_VPORT verbose
ACTION: Check FW revision and contact Emulex Technical Support.

lpfc_mes1802: VMKernel issued unknown VPORT command - rejecting

DESCRIPTION: The VMKernel issued an unknown vport command - error command.
DATA: (1) vport cmd
SEVERITY: Error
LOG: Always
ACTION: Contact Emulex Technical Support.

lpfc_mes1803: VPort unreg login to all rpis failed - trying single rpi unreg

DESCRIPTION: The vport's unreg_login to all rpis failed, defaulting to sequential unreg_login per rpi.
DATA: (1) vport DID
SEVERITY: Error
LOG: Always
ACTION: Contact Emulex Technical Support.

lpfc_mes1804: VPort unreg_login didn't complete, treating as failure

DESCRIPTION: The VPort's unreg_login didn't complete, treating as a failure and defaulting to sequential unreg_login per rpi.
DATA: (1) vport DID
SEVERITY: Error
LOG: Always
ACTION: Contact Emulex Technical Support.

lpfc_mes1805: Failed to create scsi host for VPort, instance %d

DESCRIPTION: The VPort create failed because the scsi_register failed to create a scsi host.
DATA: (1) vport instance
SEVERITY: Error
LOG: Always
ACTION: Contact Emulex Technical Support.

lpfc_mes1806: Failed to allocate VPort memory resources, instance %d

DESCRIPTION: The VPort create failed because the vport could not be allocated.
DATA: (1) vport instance
SEVERITY: Error
LOG: Always
ACTION: Contact Emulex Technical Support.

lpfc_mes1807: VPort FDISC did not complete in time allotted

DESCRIPTION: The VPort's FDISC did not complete in the timeout period.
DATA: None
SEVERITY: Warning
LOG: LOG_VPORT verbose
ACTION: This could be a fabric issue with a large vport count. If problems persist, contact Emulex Technical Support.

lpfc_mes1808: Successfully created VPort - DID x%x Type %d State %d

DESCRIPTION: Successfully created vport, display vital data.
DATA: (1) vpi (2) vport DID (3) port_type (4) port_state
SEVERITY: information
LOG: LOG_VPORT verbose
ACTION: No action needed, informational.

lpfc_mes1809: Unallowed delete of physical vport from vport_delete

DESCRIPTION: The physical vport belongs to the physical host.
DATA: (1) vport DID (2) port_type (3) port_state
SEVERITY: Error
LOG: Always
ACTION: No action needed, informational.

lpfc_mes1810: Vport getinfo on vpi <vpi> DID <DID>

DESCRIPTION: The vport is returning vport data elements to the caller.
DATA: (1) fail_reason (2) prev fail reason (3) vports max (4) vports inuse (5) linktype (6) port_state
SEVERITY: Information
LOG: LOG_VPORT verbose
ACTION: No action needed, informational.

lpfc_mes1811: VPort delete requested on vport DID x%x in state x%x

DESCRIPTION: A request to delete a vport is executing. The driver dumps the vport's state and node counts.
DATA: (1) plogi cnt (2) adisc cnt (3) unmapped cnt (4) mapped cnt
SEVERITY: Informational
LOG: LOG_VPORT verbose
ACTION: No action needed, informational.

lpfc_mes1812: VPort fabric LOGO didn't complete, treating as failure

DESCRIPTION: The VPort's fabric logout didn't complete. Continuing vport teardown.
DATA: (1) vport DID
SEVERITY: Error
LOG: Always
ACTION: Contact Emulex Technical Support.

lpfc_mes1813: VPort could located target node binding

DESCRIPTION: The vport was called to remove a target given a target ID, but the vport could not locate a node binding by TGTID.
DATA: (1) vport vpi (2) vport DID (3) tgtid
SEVERITY: Error
LOG: Always
ACTION: Contact Emulex Technical Support.